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INNOVATIONS IN THE STRUCTURE OF EDUCATION.

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THIS PAPER EXAMINES THE KINDS OF CHANGE IN EDUCATION, ESPECIALLY AT THE SECONDARY LEVEL, THAT WESTERN SOCIETIES ARE PRESENTLY UNDERGOING AND CAN EXPECT TO CONTINUE TO UNDERGO IN THE NEAR FUTURE. CERTAIN MODIFICATIONS IN THE CONCEPTION OF SCHOOLING WHICH THESE CHANGES REQUIRE ARE SUGGESTED. THE AUTHOR DISCUSSES INNOVATIONS BY WHICH CHILDREN LEARN NOT BY BEING TAUGHT, BUT BY FINDING THEMSELVES IN SPECIALLY-CONSTRUCTED ENVIRONMENTS IN WHICH LEARNING OCCURS AS A BYPRODUCT OF THE CHILD'S ACTIONS IN COPING WITH HIS ENVIRONMENT. THE AUTHOR FEELS THAT SCHOOLS OF THE FUTURE WILL UTILIZE THIS METHOD RATHER THAN THE STUDENT-TEACHER ROLE RELATIONSHIP. THESE SCHOOLS MUST HAVE THE QUALITES OF (1) PROVIDING A GREATER DEGREE OF PLURALISM, WITH REWARDS FOR A WIDER RANGE OF ACHIEVEMENTS, (2) ALLOWING FOR HIGHER OVER-ALL LEVELS OF PERFORMANCE, (3) PROVIDING INTENSE ENOUGH EXPERIENCE TO OVERCOME DIFFERENTIAL FAMILY BACKGROUND, AND (4) ENCOMPASSING TO LARGER PORTION OF THE CHILD'S LIFE. THE APPROPRIATE MODEL IS SEEN AS A FORM OF BOARDING COMMUNITY-SCHOOL USING SIMULATION GAMES AND COMPUTER ASSISTED INSTRUCTION TO INDIVIDUALIZE LEARNING EXPERIENCES. (RP)

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THE JOHNS HOPKINS UNIVERSITY

THE CENTER FOR THE STUDY OF SOCIAL ORGANIZATION OF SCHOOLS

Innovations in the Structure of Education

James S. Coleman

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I want in this paper to examine the kinds of change in education, especially at the secondary level, that western society is presently undergoing and can expect to undergo in the near future. With this as a basis, I want then to suggest certain modifications in the very conception of schooling that these changes will require. To start, however, I will approach the matter indirectly, by discussing long-term changes in the economy.

The single long secular trend that characterizes modern economics since the industrial revolution is a steady increase in the standard of living. This is the fact that makes our age different from all others before the 18th century, when this increase began. Now I propose to look at this increase in a particular way: as an increase in the price of one good in the market, relative to all others. This good which has shown a continual climb in relative price is labor. To say the price of labor has increased relative to the prices of all other things is equivalent to saying that the standard of living is going up. It is, in effect, saying that a given amount of labor is equal in price to, and can thus be exchanged for, an ever-expanding market basket of goods.

Yet this is a special kind of change in relative prices, because man's labor is the basic factor input for the creation of all other goods. Thus under ordinary conditions, an increase in the price of labor brings an increase in the price of all other goods. There is only one way in which the price of labor relative to the price of all other goods can increase over the long run. This is through technological change, which allows a unit of labor to produce a larger amount of goods.

All this is elementary indeed, but its implications for education have not been fully recognised. First of all, if a unit of labor 20 years from now is to be convertible into the production of twice as many goods

as is the case today, this must obviously be <u>different</u> labor from that at present. Yet if a restaurant 20 years hence operates as does a restaurant today, with one waiter able to serve five tables per hour, then that waiter's labor is converted into exactly the <u>same</u> amount of "goods" as is the case today. The result would be, of course, that the price of a meal in that restaurant would <u>not</u> be reduced, relative to the average price of labor, to half of its present price. The meals in such a restaurant, as with all goods and services in which the productive capacity of labor has not doubled over the twenty years, will have, like labor itself, a higher price relative to other goods. But this will obviously bring another change: as the relative price of such goods and services increases, the demand for them will tend to decrease. Thus the end result is a continual decline in demand for goods and services provided by that labor which has not doubled its productivity through technological change. Such labor can become "uneconomic" if the demand vanishes completely for its products, and it can no longer be employed. Today, there is much labor in Italy, say, that would be uneconomic in Britain. Similarly, there is much labor in Britain that would be uneconomic in the United States.

In an economic system, decline in demand for a good ordinarily leads to reduced production of the good, so that the supply does not outrun the demand. But labor is a special kind of good, and the reduction in supply of a given kind of labor occurs through different processes than is the case with material goods. It does not occur through a decline in birth rates for families that produce such labor. It occurs through a shift of the labor force or the potential labor force, out of the areas of declining relative demand and into the areas of increasing relative demand. This shift in turn can occur in two ways: through a shift of occupations among those already in the labor force, or through a shift in the type of labor entering the labor force.

The first of these shifts is not easy to produce, because of the increasing inability and unwillingness of persons to change occupations and residence as age increases. Thus this focusses particular attention on the shifts in type of labor entering the labor force.

In order to determine how those shifts can occur, it becomes important to examine the characteristics of that labor which, for the reasons I've described, is subject to a continual decline in demand. The principal characteristic of such labor is that it is labor in the traditional sense--physical labor with only a small intellectual component, in which the product of the labor derives principally from the physical input. It is, in short, labor which, though it may require intensive physical training, requires little formal intellectual training. It is labor that is ordinarily developed through on-the-job training, apprenticeship programs, and the experience of the work itself. It is labor which can be developed with a minimum of formal intellectual development in the schools.

If we look in the same way at the jobs for which the relative demand is increasing, one principal characteristic is that they involve work with new equipment, machines, and other adjuncts to labor. They are principally technical occupations, occupations that use man less as a source of physical energy, more as a co-worker with devices that supply this energy. A second principal characteristic is that many of these occupations are those that help in the production of change itself, and thus involve adaptability and intellectual skills.

Now if we look at the principal changes that are occurring in the educational systems of western nations, we find that these are changes not in the quality of education, but in its quantity. A boy or girl going through an English grammar school or a gymnasium or a lycée or an academic program in an American high school today receives much the same formal

intellectual training that he or she would have received twenty five years ago. Some would say it is a better education, some would say worse. But for that child, the education is not strikingly different. The difference lies in the number of children attending school past primary school--the number receiving training beyond the minimum reading, writing, and arithmetic necessary merely to be a consumer in modern society.

Traditionally, secondary education in Europe and England has been the first step, followed by University, in preparation for a small segment of occupations, the professions: teaching, law, medicine, and the clergy. The curricula are still largely designed for such occupations, but have been supplemented by allied subjects, principally science, for the less traditional professions of engineer and scientist.

The explosive expansion in secondary education, however, has little to do with the needs of the professions, and thus little to do with the traditional function of secondary education. If this were all, it would bring about some expansion, with steady but slow increase in the proportion of persons completing secondary school and entering university. It is much more, however, a consequence of the decline in demand for labor at the physical-labor end of the continuum, and the growth of new occupations. The consequence is that the secondary school of the future could not be, even if all children were ideally suited to it, the secondary school of the past.

But there is a second element that must be considered as well in examining secondary education of the future, in addition to the profile of labor demand. This is the profile of child supply. For secondary education, the child supply has traditionally been highly selected, from among those children whose primary school accomplishments are good; these children, in turn, have been principally those from families with a good

educational background, together with a few others. Educational achievement appears to proceed in generational increments: a child whose parent has done well in primary school can ordinarily make the step to succeeding in secondary school before leaving for a job; a child whose parent has done well in secondary school can ordinarily make the step to the university. But the change in function of the secondary school that I've described implies that secondary education be successful for children whose parents have done <u>badly</u> throughout school, children whose parents were rejected by the school system, and thus have a positive distaste for education, or even a disinclination to learn.

In short, secondary education is faced not only with new functions, in preparing the whole labor force for a changed profile of occupations instead of a small segment of the labor force for a stable set of professions, but with the task of sharply increasing the generational increment in educational level. Secondary education must begin with a supply of children with whose parents the educational system failed at all levels, and somehow succeed - succeed by preparing them in ways that are not only new for them, but new for the school itself.

Yet while doing this, the system must carry out its traditional functions of preparation for professions, and it must do so for an increasing number of students. As it carries out preparation of the whole labor force, it must bring an increasingly larger number to the point of intellectual development that they can go on to be teachers, doctors, lawyers, scientists, and engineers.

The principal direction to which this points is greater <u>variety</u> of educational products than has traditionally been true. In response to this necessity for variety, a number of countries have responded by devising different kinds of schools: one for the purely academic,

university preparation, one in preparation for technical institutes and thence to technical jobs, one for commercial and sales training, and always one residual category, to keep the children off the streets until they are old enough for the labor force.

This segregation into different schools is necessarily accompanied by some variant of the British eleven plus examination, some kind of test to allocate children into different schools, beginning at age 10, 11, 12, or 13. Yet these same countries are now questioning, as they would not have ten or twenty years ago, this early separation into different schools. Why is this? The answer closest to the truth appears to be the increased economic, and consequently political, power of lower middle classes - those classes in which parents are interested in education, but whose children often do not pass the selective examination. These groups in society are no longer willing to see their children excluded at an early age from a chance at the most desirable occupations in the society. Their power is now great enough to make their demand effective, and to impose a different kind of structure upon the schools. The question then becomes, what kind of structure will replace the separate secondary schools? The answer will in part obviously depend on political power, in particular the increasing power of groups at the lower end of the economic scale, following upon the increases in their relative economic strength. But it will depend also on knowledge of the effects of different modes of organizing schools, for this knowledge plays an important part in shaping political demands. I would like, consequently, to describe some of the critical points on which knowledge does not exist, or is partial, and on which knowledge could greatly affect the kind of school organization that will emerge.

Nearly all secondary school systems, except in the most thinly populated areas, have some kind of variations in curriculum. These

variations are sometimes at the option of the student, sometimes imposed by selective criteria, such as performance on tests or in previous courses. It is these variations in curriculum that are the roots of much of the present problem in the organization of secondary schools. The reasons for these variations in curriculum are basically two: First, different students need different things, depending upon the further education occupations they aspire to. The purest examples of this are in the humanistic and scientific gymnasia in Germany, or in the arts vs. the scientific options in the higher forms of English grammar schools. The second reason for curriculum variations is that different students can achieve at different levels, depending upon their abilities and educational backgrounds. We must leave aside here the question of how much this differential ability to perform is dependent on native ability, and how it is dependent on early training in the home and the school. Whatever the source, the fact is that the secondary schools must deal with children whose current ability to perform is at widely differing levels.

It is this second reason for curriculum variations that is most often associated with selection in which the student has no option, and is this type of variation which arouses most controversy. Its virtues are claimed to be principally for the most advanced students: they cannot be challenged to perform at a high level if they are held back by the presence of others whose performance is very low. In addition, a virtue is sometimes claimed for the poorly performing students as well: in classes where they can hope to compete with others, they will be better challenged, and will in part perform better. Its faults are claimed to be principally for the least advanced students: they do not have the opportunity to compete with the more advanced if they are excluded at the start; and the possibilities of movement from one group to another may be

very small indeed. In addition, an advantage is sometimes argued for the more advanced as well: that they will be poorly prepared for a democratic society if they are isolated from less advantaged groups throughout their youth.

The principal point that can be made about all these arguments is that although there may well be an irreducible conflict of interests between the educationally advantaged and the disadvantaged, the validity of the arguments is just not known. Knowledge on several points is necessary if the interests of either group are to be realized. I will indicate some of these points here.

The first point is based on the realization that every teaching method, every means of organizing the classroom or the laboratory, has a particular span of ability that it can comfortably encompass, without causing disadvantage to either the slow students or the fast ones. Little is known about the span that can be encompassed by different teaching methods; yet it is obvious that since this span does differ for different methods, the degree of ability-grouping necessary in schools or classes depends on the teaching method used. For example, it appears that the ability span of a classroom divided into small laboratory or other work groups is greater than that in a class discussion, which may be greater than that in a lecture. An activity organized on the basis of pairwise competition with upward and downward migration of winners and losers, as in certain kinds of tournaments, can encompass a greater ability span than an activity organized on the basis of a direct competition of all against all, as in most classrooms. But little systematic evidence is available. Does so-called "team teaching" as used in a few schools in the United States satisfactorily encompass a wider or narrower ability span than the single-teacher classroom? What is the effect of individualized instruction

such as programmed learning on the maximum ability span of a classroom? The answers to these questions are simply unknown; and until they are known, arguments for and against homogeneous grouping of students derive from insubstantial foundations.

A related question, on which some research has been done, is research ordinarily described as "effects of ability grouping." Rather than comparing the maximum ability span of different teaching methods, this research ordinarily takes as given those teaching methods found in the schools, and asks about the effects of homogeneous ability grouping upon the fast learners and the slow learners.

Yet rather than to define the question in this way, I think it more fruitful to modify and expand it, somewhat as follows: Consider the several ways of grouping or segregating students that exist in current practice of schools. These are:

1. In the most traditional, least industrial societies, there is only one kind of secondary school, and only one program of study within it. This school is designed to fulfill the classical pre-university preparation, although terminal degrees are sometimes given for students who are not able to continue all the way to university preparation.

This pattern of a single classical type of secondary school is found in many developing countries, and is characteristic for those societies in which as few as ten percent of children aged 13-15 are in school.

2. Separation of students into different secondary schools, as in the grammar schools and secondary modern schools of Britain, or the academic and technical schools of eastern Canada, or the gymnasia and mittelschule of Germany.

3. No separation of students into different schools, but separation of students of different ability level into different streams or tracks or

programs of study within a given school, as is sometimes done in comprehensive schools in the United States,and in comprehensive schools in Britain. In such schools, there are often different programs, such as academic, technical or vocational, commercial, etc.

4. No separation of students into different schools, nor separation into different streams or tracks, but assignment of students to a given group in each subject individually, on the basis of performance or tests in this specific subject. A student may be in a low ability class in English, and a high ability class in mathematics. This is often called subject-grouping and it depends upon individual scheduling, rather than group scheduling. This is a frequent pattern in United States comprehensive schools.

For any of these arrangements, there is a second distinction, between those schools where students are automatically kept with their age-group, and those where students progress at different rates. In most schools in the United States, students may fail a grade, and be placed with a lower age group in subsequent years. In the past in Britain, this pattern occurred; but at present, children are automatically moved with their age group (though usually in different ability "streams" or "tracks"). One of the newest practices in the United States is called an "ungraded" or continuous progress school, in which children do not fail or pass a given grade or subject, but are taught with others of the same achievement level in a given subject, regardless of age. This creates great age-heterogeneity in classes. A similar pattern occurs in the French lycee and in some other European systems where the final examination is in effect a university entrance examination. In these systems, different students take different lengths of time to prepare for their Baccalaureate or Abitur or GCE examination, with a resulting age--heterogeneity in classes, especially in the later years of secondary school.

There appears, then, to be two major dimensions of variation in the structure of secondary schools: the degree of separation of students of different ability levels and different types of program; and the homogeneity or heterogeneity of age within a given class.

These different structures obviously make some difference for the education that goes on within them. For example, when students are segregated into different schools, there is ordinarily a prestige differential between the schools, such as that between the grammar school and the secondary modern school. What is the effect of this upon the motivation, and thus the effect put forth by teachers and students in schools of differing prestige levels? But similarly, when there is streaming or tracking within a school, prestige differences arise, and invidious comparisons are made. What is the effect of the within-school comparisons, relative to the between-school comparisons? For example, what is more enervating, to be at the bottom of the class, to be in the bottom class within a school, or to be in the bottom school? Another question concerning such schools is the flexibility of movement between levels or groups they allow. For example, it seems likely that the greatest organizational separation, that is, in different schools, allows the least freedom of movement between groups. But just what are the rates of movement between groups in each of these types of school organization?

A third question that may be asked about these modes of grouping students is the effects upon standards of achievement. How are the standards of achievement affected by grouping within school rather than between schools, or by subject grouping or continuous progress scheduling, relative to streaming or tracking?

The most general question about these various ways of clustering children for education is just what effect other children have on the learning of a child. The principal environment of a child in school is

other children: he talks to them, and thus his use of language depends upon theirs; he competes with them, and thus they serve as yardsticks of achievement; and perhaps most important, he learns from them the appropriate stance to take toward learning and school itself. Compared with his interactions with his teachers, those with his schoolmates and classmates are far more frequent, intense, and varied. A recent national study by the U. S. Office of Education shows that the one factor in schools accounting for most variation in students' achievement is the educational and economic level of other students in the school.* This shows the overall importance of other students, but gives little information about the specific effects, information necessary to answer policy questions.

The first major question, then, on which information is necessary if schools are to carry out this enormous change of function thrust upon them, is how to cluster children in schools and in classrooms so that this clustering will provide the greatest facilitation and the least barriers to learning, and so as to permit the greatest freedom of movement. Yet one caveat must be added. As indicated earlier, different modes of teaching and learning in schools necessitate different kinds of clustering. And one of the most important changes in secondary education today is the development of new modes. Individualized instruction, by use of teaching machines and computer assisted instruction is one of these. Another is the use of simulation games, that teach through simulating certain social or physical processes in a game context. Thus whatever ways of organizing schools do devlop must be appropriate, not to the methods of teaching that characterize the past, but to the methods that will characterize the future.

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* Equality of Educational Opportunity, Washington: Government Printing Office, 1966.

If this were the only caveat necessary to an examination of structural changes in education, modern nations would be fortunate indeed. But this is just the start of the difficulty. I have asked above what forms of social organization of schools will most facilitate learning. But if this is the organizational question, there is a meta-organizational question as well: how to so structure the system of education that it <u>can</u> change in ways beneficial to learning. For one of the principal characteristics of schools until now has been the enormous resistance to change that schools supported by the state present. Schools are part of an authority system, usually the authority system of the local government; and they develop their own internal authority system, with the superintendent or local education authority at the top, and the classroom teacher at the bottom. At each level, the demands and rewards made by those in authority are demands and rewards for order, for maintaining discipline, and constraints against the threat of disorder that comes with change. It is order and discipline that is the central requirement of every bureaucracy, and above all else, school systems are bureacracies. Results, in the sense of learning effected in children, are wholly secondary. A bureaucracy can continue indefinitely without results; it cannot continue for long without order and discipline.

If schools are to obtain results, then attention must be paid to the way that organizations change, and the ways of inducing such change. There is one means in nature and in society that insures the existence of organizational change, and this is competition for survival. That is, if an organization's survival depends upon its results, then the rewards within the organization for order, discipline, and stability may give way to rewards for results. (I say it <u>may</u> give way, because there is no certainty that the organization will survive. Some organizations are so inflexible

that even the threat of total disruption cannot bring about the necessary reorganization. The most salient examples of this are the downfall of rigid political regimes through revolution). For example, in business, firms that do not face competition become inefficient; in fact, the most important recent development in management techniques to maintain efficiency in large firms is the creation of competition between internal divisions producing intermediate components, and external producers of the same components. If the internal divisions cannot supply the component at a price competitive with that of an external supplier the component is bought from the external supplier. The innovation is comparable to the lowering of protective tariffs by nations.

There does exist some competition between some schools for one category of students, competition for entrance into desirable universities. The effect of this on schools is enormous: it focusses attention on those students who are likely candidates, and those subjects that are necessary. The absence of such competition for other students is evidenced by the lesser effort by students, teachers, and school administration alike when university positions are not at stake.

The introduction of general competition between schools could be carried out in a number of ways. I will mention three that have been recently suggested in the United States. As these examples will indicate, the effects of a competitive system depend greatly upon its precise structure; the policy questions by no means end with the decision to institute competition among schools.

One possible mode of competition is to create for secondary education a pure consumer's choice. The model is the "GI Bill of Rights" in the U.S. after World War II, in which each veteran could choose to attend any private university, technical school, or any training or educational

institution approved by the government, and so long as he performed acceptably the government paid the institution the costs of his attendance--without controlling the budget of the institution itself. This could occur only when "reasonable charges" to the government could be determined by charges made to non-veterans for equivalent training. If costs of all students were paid, then a more careful determination of the basis of payment would be necessary, or else full government budget control, which largely destroys the competition and recreates the bureaucracy. At the secondary school level, a number of other problems arise in such a system: for example, payment of all costs will distribute educational funds unequally, in effect giving more to those attending high-cost institutions. Another problem is that the consumer, student or parent, may not have a good basis for selecting his education, and thus choose a school that appears attractive but is less effective than another. It assumes, in short, that the consumer of education always knows what is in his best interest.

A variant upon this procedure is a system of payment by results that allows part of the consumer choice to be exercised by the government. Criteria of achievement would be established by the government, and schools (or special purpose contractors, such as a mathematics center or foreign-language center) would be paid for the increment in achievement, as measured by standardized tests. The fiscal and contracting managements would be much like government contracts in military expenditure: the government would pay a contractor for a well-defined product, that is, a given increment of achievement. In addition, the contractor would have to satisfy the children and parents as well, for choice of attendance rests with the child or parent. Such an arrangement would have much to recommend it: it would draw into education those entrepreneurs most able to increase achievement, and it would give educators far more reason than they now have to induce achievement in students.

Both these systems leave the organization of the curriculum undetermined, and seek to establish a set of rewards to educacators that will lead them to devise the most effective curriculum. There is another approach, however, that leaves the overall system of education much as it is, and modifies the curriculum in a way to introduce competition among schools. This is the introduction of regular interscholastic competition in academic subjects, just as it exists in athletics: leagues, schedules, and tournaments. Such inter-school competition would induce the development of intellectual skills as athletic skills - and the school administration would provide rewards and demands on its staff not merely for order and discipline, as is largely the case now, but also for high performance.

This structure has dangers, as do the others. But one point that is ordinarily considered a danger is in my estimation not one, but a positive virtue. The competition would develop the intellectual skills of a minority of students, and would not insure that the achievement of <u>all</u> was as high as possible. This is ordinarily seen as an extreme disadvantage, and quite undemocratic. But note the monolithic assumptions on which this view is based: that intellectual achievement is the <u>only</u> kind of achievement for which one should strive; that schools should be directed to making <u>everyone</u>'s performance as high as possible in this <u>one</u> realm, rather than encouraging the development of a variety of talents. If the secondary school and the university are, as suggested earlier, to serve as preparation for a much wider variety of occupations than ever before, how can the curriculum maintain the monolithic academic criteria appropriate for the professions? The best example of institutional adaptation in this direction is some state universities in the United States, where there is a multiplicity of courses and degree programs, some with almost no intellectual content - and others with intellectual content surpassing that of

most classical European universities. In secondary education, such pluralism has not developed within the curriculum, and I suggest it would do so under a system of interscholastic games, leagues, and tournaments, based on performance in a wide variety of activities, including academic subjects, athletics, drama, art, cooking, driving, dance, to replace the system in which reluctant students are pushed and pulled to a given standard in a single realm.*

These are only three examples of the way bureaucracy's defects can be reduced in schools through competitive processes. It is far from clear what will be an appropriate solution. What is clear is that the present structure of rewards for school administrators in state schools encourages the defects of bureaucracy and the neglect of results; and that if schools are to make the extraordinary accomplishments that will be required of them in the future, this structure must change so as to induce and reward these accomplishments.

I want now to shift attention to the special role of the adolescent in modern society; for the social changes I have examined above do not take note of the specific role of the adolescent in society. The new task this implies for secondary schools is less easily stated than those described above, but perhaps even more important. Education was once a minor adjunct to the family, for the family held principal responsibility for bringing its young up into the adult world. The family was able to discharge that responsibility, so long as its children followed closely in the paths of the mother or father. But the changes I've described in the occupational structure, and the rapidity of those changes, make this in

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* Lewis Dexter points out that the assumptions on which our educational system is based - that to be stupid is one of the most undesirable states of being - result in schools that systematically convince many children that they are stupid, and thus fundamentally inferior. See The Tyranny of Schooling, New York: Basic Books, 1964.

many cases no longer possible. A good index of this is the phenomenon of "adolescence." The period of adolescence ordinarily does not, in traditional societies where children follow in parents' footsteps, constitute a separate and distinct period of life, in which a young person is physically mature, largely free from adult restrictions, but not yet occupied with adult activities. The transition from being a child to being an adult is not separated by a long transitional period of semi-autonomy, semi-irresponsibility, the period we call "adolescence" in modern society. It is when the experience and skills of their own parents are largely irrelevant to their own anticipated futures that young people turn to one another, develop their own tastes, habits, styles, and fashions.

In such a circumstance, the family is no longer very effective in bringing its children from childhood through this transitional phase into adulthood. Attitudes toward work, attitudes toward society, the responsibilities of citizenship, attitudes to authority, and other similar intangibles are no longer naturally transmitted by parents. The contexts of everyday activities in which parents transmitted such attitudes are less often present. In their place, adolescents pick up these attitudes from their own life situation, and from other adolescents. This is best exemplified by attitudes to authority. Such attitudes have in the past been transmitted from father to son - for example, particularly in Britain and Europe, children of persons in service positions learning patterns of deference, and children of upper class parents learning patterns of authority. But increasingly, all adolescents are learning the same attitudes to authority, that derive from their peculiar position of having none, and often finding themselves herded like sheep in schools and universities. The attitudes toward authority they naturally develop in such a situation is that all authority is bad, and that the world's principal evils are due

to the "power structure." This phenomenon, incidentally, as most others I have described, is far more pronounced in the United States than in England and Europe, because the economic changes I have described have progressed farther there. Nevertheless, there are all sorts of indications in England and Europe that young people are obtaining these attitudes from one another, across social class lines, to a degree that their parents never did. Fashion in clothes, which now for the first time originates among the young of all classes, rather than among adults of upper classes, is perhaps the best indicator of a very pervasive change.

As the illustration of attitudes toward authority suggests, this new pattern, of adolescents learning attitudes from one another, and from their own situation in life, need not produce worse results than learning them from their parents. Certainly the attitudes of deference and authority inherited from parents along social class lines have nothing to highly recommend them in modern egalitarian social structure. But the point is not that the attitudes are better or worse. It is that they result from things that happen to adolescents outside the home, in school and in leisure. Thus these attitudes come to be the responsibility of no one, or else by default, the responsibility of the school. To shape such attitudes has never been a major goal of the school, except in the public schools of Britain. Yet despite the totalitarian dangers that arise when children learn the values with which they confront the society as adults from state-controlled schools rather than from the home, the dangers must be faced. They are learning such values from the school and one another whether or not the schools explicitly teach them, simply through their experience in the school. So the question becomes, not whether the schools should teach such values, but how they will do so, and whether they will do so unintentionally or intentionally.

The answer to the question of how the values can be taught by schools is suggested by those cases in which they are taught. The British public schools teach numerous values, some of which most people would agree with, and some of which they would disagree with. One is the sense of a hierarchical order in society, how to submit to authority and how to wield authority. These values come from the structure of authority in the school itself, from the community in which the child lives for five or six years. The rebellious attitudes to authority of students at a university like Berkeley derive, unintentionally on the part of the university, from the combination of personal permissiveness, impersonal regulations, and general indifference in the university's relation to the students. Just as a child in the home learns his attitudes toward society and his ways of interacting with others from the way his parents <u>behave</u> toward him, and not from the moral precepts they give him, the child learns these values from the analogous elements in the school, and not from what is <u>taught</u> there.

This fact has important implications for the way in which secondary education should be structured. It means that by the very structure of the internal relations in the school as a community, children are learning how they should confront the society; and thus these relations should reflect the kind of society we aspire to achieve. The very structure of the school itself must do this, for if it does not, it will be teaching the kind of society that we do not aspire to achieve. It is important again to emphasize why this is so now as it has not been so before: the adolescent sees the experience and skills of his parents as largely irrelevant to his own future, and in addition is less often in a position to learn things relevant to his future from them. Thus his attention is directed more nearly outside the family than before, to the world he experiences in school and in leisure activities. His attention is directed there, but the school is hardly structured in a way to make fruitful use of that attention.

The consequence of all this is that we must examine more closely those ways in which the school has always been defective, and could manage only because its task was so much smaller. Many of these defects derive from the special role of "student" in which it casts an adolescent. Being a student is an appropriate aspect of a young person's life; but it gives him little opportunity for working with others toward a common goal, little opportunity to take responsibility for the welfare of others, almost no chance to make decisions that have consequences, in short, little opportunity to help himself become a man, and see himself becoming one. It is becoming increasingly clear in educational psychology that for a child to achieve the self-respect and capacity for taking responsibility that constitutes "becoming a man," he must be presented with strong challenges which he can meet by extending himself, and he must be rewarded for meeting these challenges or demands. Modern society has conspired to prevent that possibility for adolescents except in the role of student, and in that role to allow it only for the minority that comes out on top.

Again one can look to the best of the British public schools, as an example of a structure of relations which <u>does</u> allow a boy to become a man. It matters less, from this viewpoint, that he may be learning these things in the context of an hierarchial authority system than that he <u>is</u> learning to become a man, learning something other than how to be a student.

It is of course not essential that he learn these things in what is termed a "school." What is essential is that there be some means by which he learns them, and it is essential for the society as a whole to realize this is now <u>its</u> task, and no longer that of the family, and of an occupational structure associated with the family.

The solution of this problem is less easy than the diagnosis. For example, even if society could afford to keep all its adolescents in boarding schools, in communities where such responsibility and maturity might be developed, we do not have the skills to design such communities of adolescents on a massive basis. Nor are there many good examples outside the schools. One of the best such examples, for rural children in the United States, is 4-H Clubs, which are partly in, partly outside the schools, and in which young people take responsibility for rather ambitious projects of their own. But this example cannot easily be transformed to be appropriate to an urban setting, nor to later adolescence. Scouting has some such values, but principally for boys who move to leadership positions, and only when the adult leader is himself good, which is not always the case. Acting as a counselor in a summer camp, with responsibility for younger children, is a remarkably good means for making men out of boys; but this could work only for a small proportion of young people.

Several educational innovations that have recently been developed appear extremely promising in this direction. These are innovations in which children learn not by being taught, but by finding themselves in specially-constructed environments. Learning occurs as a by-product of the child's actions in coping with this environment. One example is the "responsive environment" developed by Omar Kahyam Moore, in which young children learn to read. This environment is, in effect, a talking typewriter, which gives a spoken response to the child's actions in typing printed symbols. The environment thus constitutes a translation for him from printed language to spoken language, and he learns by his own testing and exploration of this environment.

A second example, of much wider scope, is simulation games, as developed by several investigators.* These games abstract from the total social environment a set of processes around which a game is constructed. The rules of the game impose on the players the kinds of role-obligations and goals that arise in real life. The players learn the functioning of these social processes as a by-product of playing the game.

In both these examples, learning occurs in a more natural way than in current schools, successfully coping with an environment that is relevant to the child's future. It seems likely that in the successful educational institutions of the future, children will learn in this way, rather than by being taught in a student-teacher role relationship.

The requirements that educational institutions of the future must fulfill are clear. They must do these things:

1. Teach intellectual skills to an increasing proportion of the population;
2. Yet provide for a greater variety in the kinds of skills taught, as they come to be the training-ground for an ever-wider proportion of the population;
3. At the same time, they must allow for much greater opportunity for mobility for children from diverse family backgrounds;
4. And they must recognize the peculiar role - or absence of role - into which social change, and their institutionalization inside schools, have cast adolescents, depriving them of authority and responsibility;
5. Finally, they must cope with the reduction in family functioning in socialization, leaving adolescents less prepared for the world in practical everyday affairs than in the past.

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* For a general overview of such simulation games, see Sarane Boocock and Erling Schild, Simulation Games for Learning, Los Angeles: Sage Publications, 1967.

These requirements are obviously difficult ones to meet simultaneously. They imply institutions which have these qualities: provide a greater degree of pluralism, with rewards for a wider range of achievements; allow for a higher level of performance on any one of these than is presently the case in most schools; provide an intense enough and flexible enough program so that a child's future performance in a given area is reasonably independent of his previous performance and his family background; encompass a larger portion of the child's life, with a set of roles for each child that includes not only the role of student, but also that of a person responsible for a socially-relevant task or for other persons.

Boarding community-schools might come closest to possessing these qualities, for a single reason: they restructure the child's total environment, and thus if this environment is appropriately structured, the variety of roles, the self-responsibility, the challenges and rewards for meeting them, can be developed. Yet it is this total-environment character of boarding schools that constitutes their danger as well. Because they encompass all a child's environment, they have not only the possibility for powerfully beneficial changes, but also the possibility for powerfully harmful changes.

Yet the alternative to institutions that can potentially inflict great damage is institutions that can effect little change. Public education has until now created schools of this latter sort, following the general premise that errors of omission are politically safer than errors of commission. In political democracies, policy-makers in public education will only with great reluctance devise institutions with powerful potential for change. It is probably the case that only the increasing defection of the family as a socializing agent will create situations of chaos or failures of socialization great enough to force educational institutions to become

powerful agents of socialization. The failures are currently most apparent among lower class and upper-middle class American children; the pressures toward total-environment institutions for adolescents can first be expected there. They will be followed of course, by similar failures and similar pressures in Europe.

The specific form that these institutions will take will depend, of course, on chance factors. But whatever the specific form, they will encompass many more roles than that of student and they will provide a much more intense sociological experience than do present schools. Whether they carry out these functions within the adult community, as does a school in an Israeli kibbutz, or in a separate youth community, is a question for time, informed by research results, to tell. Only when the diagnosis itself has become much clearer and much more fully articulated will it be possible to design solutions that have a reasonable chance of success. For we are now engaged, in the development of our educational institutions, in a far larger task than we have ever attempted before. We are attempting to carry out those functions that were once carried out naturally - for better or for worse - within the family, as part of its everyday activities. To devise a reasonable substitute is a large task, and one that will indeed require a great deal of serious thought, imaginative experimentation, and careful evaluation of results, if schools are not to do a worse job than the more informal arrangements they are coming to replace.